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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,679	08/09/2001	Nagayuki Takao	0152-0574P-SP	2364

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 02/05/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,679

Applicant(s)

TAKAO ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12, which depends on claim 1, recites that the dye is “solvent-insoluble” while claim 1 recites that the dye has “solubility in water lower than solubility in water-soluble solvent” and that the solubility in water is “10 wt.% or lower”. The scope of claim 12 is confusing given that it is not clear how a dye which has solubility in water lower than solubility in water-soluble solvent and further, little or no solubility in water (less than 10%) can also be a solvent-insoluble dye. Isn't the dye described in claim 1 a solvent-soluble dye? Clarification is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 5-12, 16, and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohta et al. (U.S. 6,211,265).

Ohta et al. disclose water-based ink jet ink comprising water, 0.1-20% water-soluble polymer which includes copolymer obtained from monomers including acrylic acid, 5-50% solvent including alcohol and ketone, penetration accelerator such as ethanol, dye including oil-soluble dye, vat dye, and disperse dye which would inherently possess solubility in water less than solubility in solvent as presently claimed, azole compound including benzotriazole-5-carboxylic acid and 1H-benzotriazole-1-methanol, and additives including pH adjustor and preservatives (col.3, line 59, col.4, lines 20-24 and 49, col.5, lines 30-31, 59-60, and 63, col.6, lines 1-2, col.7, lines 28-53, col.8, lines 58-60, and col.9, lines 13-20). Although there is no disclosure of the viscosity or flash point of the ink, given that Ohta et al. disclose ink identical to that presently claimed, it is clear that the ink would inherently possess viscosity and flash point as presently claimed.

Although there is no disclosure that the azole compound functions as a quick-drying property imparting agent or any disclosure regarding the solubility of the compound in water/solvent or its melting temperature, given that Ohta et al. disclose triazole and solvent identical to that presently claimed, it is clear that the azole compound will inherently function as quick-drying property imparting agent as well as inherently possess solubility and melting temperature as presently claimed.

In light of the above, it is clear that Ohta et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (U.S. 6,211,265) in view of either Doi et al. (U.S. 6,378,999) or Yatake et al. (U.S. 6,051,057).

The disclosure with respect to Ohta et al. in paragraph 4 above is incorporated here by reference.

The difference between Ohta et al. and the presently claimed invention is the requirement in the claims of silicone or fluorine based surfactant.

Doi et al., which is drawn to ink jet ink, disclose the use of 0.01-3% silicone or fluorine-based surfactant in order to control the surface tension of the ink and to improve the reliability of jetting the ink (col.9, lines 40-43).

Alternatively, Yatake et al., which is drawn to ink jet ink, disclose the use of 0.01-5% fluorosurfactant in order to effectively regulate the penetrability of the ink (col.7, lines 44-45 and 49-56).

In light of the motivation for using silicone and/or fluorine based surfactant disclosed by either Doi et al. or Yatake et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such surfactant in the ink jet ink of Ohta et al. in order to produce an ink with suitable surface tension and improved reliability or alternatively, good penetrability, and thereby arrive at the claimed invention.

8. Claims 1-16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53140105 in view of Kitamura et al. (U.S. 6,498,222).

Pending translation and upon consultation with USPTO translator, it is noted that JP 53140105 discloses ink comprising water, solvent including monovalent alcohol, 0.002-10%

water-soluble polymer including acrylic resin, and 0.01-2% fluorescent dye which is europium thenoyltrifluoroacetate. The ink has viscosity of 1-10 cps. The ratio of water to solvent is 30-90:70-10.

Although there is no disclosure regarding the solubility of the dye in water and solvent as presently claimed, given that JP 53140105 disclose dye and solvent identical to those presently claimed, it is clear that the dye would intrinsically possess such solubility.

The difference between JP 53140105 and the present claimed invention is the requirement in the claims of quick-drying property imparting agent.

Kitamura et al., which is drawn to ink jet ink, disclose the use of 1-40% azole compound such as 1H-benzotriazole-1-methanol in order to prevent clogging of printer nozzle (col.11, lines 11-15 and 22-25 and col.11, lines 33-36). Although there is no disclosure that the azole compound functions as a quick-drying property imparting agent or any disclosure regarding the solubility of the compound in water/solvent or its melting temperature, given that Kitamura et al. disclose triazole identical to that presently claimed, it is clear that the triazole compound will intrinsically function as quick-drying property imparting agent as well as inherently possess solubility and melting temperature as presently claimed.

In light of the motivation for using triazole compound disclosed by Kitamura et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such triazole in the ink of JP 53140105 in order to produce ink which will not clog printer nozzles, and thereby arrive at the claimed invention.

9. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53140105 in view of Kitamura et al. as applied to claims 1-16 and 19-20 above, and further in view of either Doi et al. (U.S. 6,378,999) or Yatake et al. (U.S. 6,051,057).

The difference between JP 53140105 in view of Kitamura et al. and the presently claimed invention is the requirement in the claims of silicone or fluorine containing surfactant.

Doi et al., which is drawn to ink jet ink, disclose the use of 0.01-3% silicone or fluorine-based surfactant in order to control the surface tension of the ink and to improve the reliability of jetting the ink (col.9, lines 40-43).

Alternatively, Yatake et al., which is drawn to ink jet ink, disclose the use of 0.01-5% fluorosurfactant in order to effectively regulate the penetrability of the ink (col.7, lines 44-45 and 49-56).

In light of the motivation for using silicone and/or fluorine based surfactant disclosed by either Doi et al. or Yatake et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such surfactant in the ink jet ink of JP 53140105 in order to produce an ink with suitable surface tension and improved reliability or alternatively, good penetrability, and thereby arrive at the claimed invention.

10. Claims 1-16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53140105 in view of Ohta et al. (U.S. 6,211,265).

Pending translation and upon consultation with USPTO translator, it is noted that JP 53140105 discloses ink comprising water, solvent including monovalent alcohol, 0.002-10% water-soluble polymer including acrylic resin, and 0.01-2% fluorescent dye which is europium

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thenoyltrifluoroacetate. The ink has viscosity of 1-10 cps. The ratio of water to solvent is 30-90:70-10.

Although there is no disclosure regarding the solubility of the dye in water and solvent as presently claimed, given that JP 53140105 disclose dye and solvent identical to those presently claimed, it is clear that the dye would intrinsically possess such solubility.

The difference between JP 53140105 and the present claimed invention is the requirement in the claims of quick-drying property imparting agent.

Ohta et al., which is drawn to ink jet ink, disclose the use of azole compound such as 1H-benzotriazole-1-methanol in order to prevent ink from drying at the tip of printer nozzles (col.6, lines 10 and 12-20 and col.7, lines 38-53). Although there is no disclosure that the azole compound functions as a quick-drying property imparting agent or any disclosure regarding the solubility of the compound in water/solvent or its melting temperature, given that Ohta et al. disclose triazole identical to that presently claimed, it is clear that the triazole compound will intrinsically function as quick-drying property imparting agent as well as inherently possess solubility and melting temperature as presently claimed.

Additionally, although there is no explicit disclosure of the amount of the triazole compound used, given that the compound is used to prevent drying of the ink at the nozzle tip, absent evidence to the contrary, it would have been within the skill level of , as well as obvious to, one of ordinary skill in the art to choose any amount of triazole, including that presently claimed, in order to produce an ink which would not clog printer nozzles.

In light of the motivation for using triazole compound disclosed by Ohta et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use

such triazole in the ink of JP 53140105 in order to produce ink which will not dry at tip of printer nozzles, and thereby arrive at the claimed invention.

11. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53140105 in view of Ohta et al. as applied to claims 1-16 and 19-20 above, and further in view of either Doi et al. (U.S. 6,378,999) or Yatake et al. (U.S. 6,051,057).

The difference between JP 53140105 in view of Ohta et al. and the presently claimed invention is the requirement in the claims of silicone or fluorine containing surfactant.

Doi et al., which is drawn to ink jet ink, disclose the use of 0.01-3% silicone or fluorine-based surfactant in order to control the surface tension of the ink and to improve the reliability of jetting the ink (col.9, lines 40-43).

Alternatively, Yatake et al., which is drawn to ink jet ink, disclose the use of 0.01-5% fluorosurfactant in order to effectively regulate the penetrability of the ink (col.7, lines 44-45 and 49-56).

In light of the motivation for using silicone and/or fluorine based surfactant disclosed by either Doi et al. or Yatake et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such surfactant in the ink jet ink of JP 53140105 in order to produce an ink with suitable surface tension and improved reliability or alternatively, good penetrability, and thereby arrive at the claimed invention.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

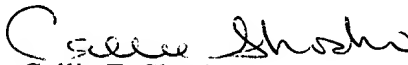
Ito (U.S. 6,387,984) disclose aqueous ink comprising dye, benzotriazole, water-soluble resin, solvent, and water, however, there is no disclosure that the dye has solubility in water less than solubility in solvent as presently claimed.

JP 09169942 disclose aqueous ink comprising dye, mercaptotriazole, and water-soluble polymer, however, there is no disclosure that the dye has solubility in water less than solubility in solvent as presently claimed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Examiner
Art Unit 1714

CS
January 30, 2003